Viral Hemorrhagic Fevers

What are viral hemorrhagic fevers?

Viral hemorrhagic fevers (VHFs) are diseases caused by groups of viruses such as the Ebola virus and Marburg virus. In general, infection with these viruses may cause serious illness with fever and damage to blood vessels affecting many organ systems. Damage to the blood vessels can disrupt blood flow and cause hemorrhaging (severe bleeding). Although some VHFs are mild illnesses, many can be fatal. Other VHFs include Lassa fever, yellow fever, Crimean-Congo and New World hemorrhagic fever viruses.

What are the symptoms of viral hemorrhagic fever illnesses?

Although symptoms vary for each specific virus, initial signs of VHF often include fever, rashes, body aches, headache and fatigue. Severely ill patients may also show signs of shock, bleeding and damage to the blood vessels in major organs including the liver, lungs, nervous system and, occasionally, the kidneys. Typically, symptoms develop within days but may not appear until several weeks after exposure.

How are hemorrhagic fever viruses spread?

Humans can be infected in several ways:

- Contact with urine, fecal matter, saliva or other body excretions from infected rodents.
- Contact with the bodies of dead infected animals.
- Being bitten by infected mosquitoes or ticks.
- Contact with animals that have been bitten by infected mosquitoes or ticks.
- Close contact with infected people or their body fluids. Ebola, Marburg, Lassa fever, New World hemorrhagic fever, and Crimean-Congo hemorrhagic fever viruses can be spread from person-to-person. People can also be infected by touching objects such as syringes and needles that have been contaminated with infected body fluids.

Where do cases of viral hemorrhagic fever occur naturally?

Hemorrhagic fever viruses are found around the world, but none of the VHF viruses are native to the United States. Because VHF viruses need an animal or insect host to survive, VHFs are rare outside of the areas where the host for the specific virus lives.

Rats and mice often carry VHF viruses, but the viruses may also be carried by ticks and mosquitoes. Occasionally, an infected traveler may carry a hemorrhagic fever virus from an area where the virus occurs naturally. If the virus is a type that can be transmitted by person-to-person contact, the traveler can infect other people.

How can cases of viral hemorrhagic fever be prevented and treated?

The most effective way to prevent VHFs from being transmitted from person-to-person is proper medical isolation of infected patients and use caution to prevent exposure of health care workers and others to the virus. Special care must also be taken to properly dispose of medical wastes and tissues from infected patients.

There is no specific drug for treatment of VHF—patients receive supportive care. Patients infected with Lassa fever virus may respond to the antiviral drug ribavirin, if treated early in the course of infection.

The only licensed, approved vaccine for VHFs is for yellow fever; however, the vaccine must be taken prior to yellow fever exposure. Experimental vaccines for several other VHFs are being studied, but are not yet licensed or approved for general use.

VHFs and bioterrorism?

The Centers for Disease Control and Prevention identifies hemorrhagic fever viruses as agents that could be used as biological weapons because some are highly infectious, can be easily spread through the air and have the potential to cause great numbers of illnesses and deaths. They are also known to have been the subject of biological weapons research.

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